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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,765	05/01/2001	Costa Tzoganakis	1811-228 MIS:jb	7506
24223	7590	04/28/2005	EXAMINER	
SIM & MCBURNEY 330 UNIVERSITY AVENUE 6TH FLOOR TORONTO, ON M5G 1R7 CANADA			TESKIN, FRED M	
			ART UNIT	PAPER NUMBER
			1713	

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/762,765

Applicant(s)

TZOGANAKIS ET AL.

Examiner

Fred M. Teskin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION:

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-7, 10-15, 18, 19 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-5, 10-15, 18 and 21-29 is/are allowed.
- 6) ☒ Claim(s) 6, 7 and 19 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

The replies of February 10 and March 29, 2005, have been entered in full. Accordingly, claims 2-7, 10-15, 18, 19 and 21-29 remain pending and under examination.

The Section 112 rejection of the previous Office action has been obviated by the amendments defining "Z" as oxygen in claims 2, 4 and 6. The prior art rejection based on Janssen et al has been obviated by the cancellation of claims 1, 8, 9 and 20, and the rewriting of claims 2-7 as process claims and of claims 10, 12 and 15 in independent form including all the limitations of their respective base claims.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the lack of proper antecedent basis for the subject matter of the phrase "metallic, glass, ceramic or other vitreous surface" as recited in original claim 15 and new claim 29.

Claim 7 is objected to because of the following informalities: the word –of– should be inserted after "process" in line 1. Appropriate correction is required.

Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 6 provides the limitation to "said silane polymer" in lines 1-2. There is inadequate antecedent basis for this limitation in the claims. Note the reference in base claim 21 to "a silicone polymer ..." (also cf. claims 2 and 4, lines 1-2 of each).

Appropriate correction is required.

The previously indicated allowability of claim 19 is withdrawn in view of the teachings of Janssen et al as detailed below.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 6084030 to Janssen et al ("Janssen").

Claim 19 is to a process of forming a branched polypropylene, which comprises: effecting hydrosilylation at a vinyl end of polypropylene with a trialkoxysilane to form a functionalized polymer, and thereafter effecting post-reaction branching of the functionalized polymer by reacting Si-OR groups to form a Si-O-Si bridge.

Janssen differs from claim 19 only in that hydrosilylation of a vinyl end of polypropylene with a trialkoxysilane is not disclosed in a single embodiment.

Nevertheless, Janssen teaches the concept of coupling a polyolefin pre-arm with a simple hydrosilane having a structure wherein  $R_8$ ,  $R_9$  and  $R_{10}$  are the variable groups of a hydrosilane. As per column 10, line 55 to column 11, line 2,  $R_8$  and  $R_9$  are each a "hydrolyzable group such as halogen atom and preferably chlorine or a lower alkoxy group containing 1 to 6 carbon atoms, and  $R_{10}$  is a readily hydrolyzable group as described above or hydrogen, alkyl, aryl or cycloalkyl." Given the teaching of a lower alkoxy group as a member of a relatively small genus of hydrolyzable groups on the hydrosilane reactant, one of ordinary skill would have been led to select a trialkoxysilane to effect the polyolefin pre-arm coupling reaction of Janssen.

As to the polyolefin pre-arm polymer, Janssen depicts the reaction of an ethylene/propylene copolymer (EP) containing vinylidene terminal unsaturation with the hydrosilane (col. 11, lines 5-15), but broadly teaches forming the polyolefin pre-arm of a polyolefin containing terminal unsaturation in the form of vinyl, vinylidene, vinylene or mixtures thereof, column 5, lines 40+. Moreover, Janssen there indicates the general equivalence of polyolefin homopolymers like polypropylene and copolymers of one or more 1-alkenes.

Given an expectation of functional equivalence as the polyolefin pre-arm polymer, it would have been obvious to one of ordinary skill in the art to conduct the coupling reaction of Janssen by reacting a trialkoxysilane with a vinyl-terminated polypropylene instead of EP containing vinylidene terminal unsaturation.

As to the second step of the claimed process, it would further have been obvious to subject the resulting polypropylene-terminated silane to the requisite branching

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reaction in accordance with the teachings at column 11, line 16+. Janssen there teaches that the resulting polyolefin-terminated silane can be reacted, typically in the presence of water, to form the corresponding *branched polymer* containing polyolefin arms and a siloxane polymer backbone. As a polysiloxane necessarily contains an -Si-O-Si- backbone (per the general formula shown at col. 8, line 50), application of this branching reaction to said polypropylene-terminated silane would expectedly result in formation of a "Si-O-Si bridge", as claimed, between polypropylene arms. Thus, the claimed process of forming a branched polypropylene would have been *prima facie* obvious to one having ordinary skill in the art at the time of the invention.

Claims 2-5, 10-15, 18 and 21-29 are allowable over the prior art of record.

Claims 6 and 7 would be allowable would be allowable if amended or rewritten to overcome the rejection under 35 U.S.C. 112 and the objection (re claim 7) set forth in this Office action.

In view of the new grounds of rejection applied to original claim 19, this action is made non-final.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F. M. Teskin whose telephone number is


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(571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

FMTeskin/04-21-05



**FRED TESKIN**  
**PRIMARY EXAMINER**  
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